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Abstract

The counters were replaced with a new unit, and the temperature monitor was upgraded from an old 10-bit system to a new 24-bit version. The Peltiers in the aft detectors were replaced.

1 Introduction

Steven Hale visited Carnarvon from September 3 to September 13. The Tigers counters that had been repaired by Les Schultz were replaced with a new unit, and the old 10-bit temperature monitor was upgraded with a new 24-bit version. The Peltiers in both aft detectors were replaced.

2 Replaced Peltiers

The Peltiers in the aft port detector were replaced on the last trip [1]. Since then, the cooling on both aft detectors had failed. There were replaced on this visit.

The Peltiers in the detectors in Jabba do not seem to last very long. We had thought the problem was with the installation. When screwing the photo-diode down onto the Peltiers it is very easy to apply too much pressure and damage the Peltiers. The damage is either catastrophic and instant, or slight and causes delayed premature failure.

However, during this repair the bad Peltiers were visibly corroded. Maybe it is just the salty coastal air in Carnarvon that causes the failures, and we will just have to budget to replace them regularly.

We currently have no spare Peltiers remaining.

3 Replaced Tiger Counters

The Tiger counters stopped responding on 2012 July 19. It appeared to be a failure of the LCD module and one of the 7805 power regulators.

Les Schultz replaced R62 and U17 on 2012 August 3. The LCD module still did not work, but the counters were working again and returning values to the computer. It was good enough.

On this trip, a complete new unit has been installed. The repaired one was brought back to Birmingham for further investigation.

4 Replaced Temperature Monitor

The temperature monitor had previously suffered water damage when the dome remained open during rain. It later came back to life after a few months, presumably having sufficiently dried out. Then, a few months before this trip, the water tank temperature probe stopped working. It was not clear whether it was the probe or still the temperature monitor at fault.

A new 24-bit temperature monitor was installed on this trip. The tank temperature probe immediately began working again. There are only five channels used on the monitor. The water tank, ambient, room, and dome temperatures, plus the voltage from the cloud detector. All other channels are unconfigured and will require the relevant resisters to be installed before they will work.

The old temperature monitor was brought back to Birmingham for further investigation.

5 General Maintenance

The front filters were cleaned on both Jabba and the autoguider.

The mains controller channels were all checked and corrected following everything being disconnected due to a suspected mains controller fault. We can now power cycle everything remotely, again.

6 NBN Co

The dome was shutdown and powered off shortly after this trip whilst the adjacent construction work by NBN Co is completed.

References

[1] Steven J. Hale and Brek A. Miller. The installation of a digital autoguider in Carnarvon in 2011 September. *BISON Technical Report Series,* Number 348, High-Resolution Optical-Spectroscopy Group, Birmingham, United Kingdom, January 2012.